Measuring consumers' willingness to pay for coffee differentiation using auctions: A comparison of Fair Trade, organic, and cause-related marketing coffees – and a mix thereof

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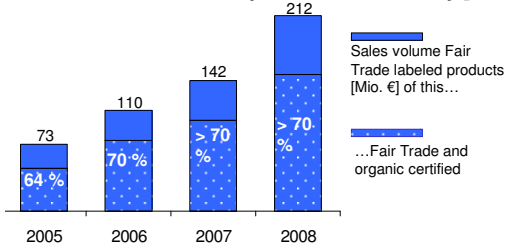
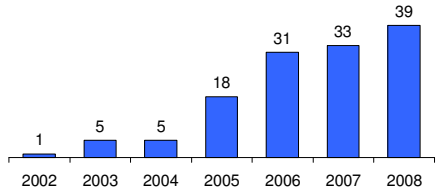
Sales volume Fair Trade products in Germany [Mio. €]



Research motivation & Background information

- Coffee market is highly differentiated: e.g., roasted or instant coffee, mild, flavored or decaffeinated, in house or to-go consumption, pads or Nespresso capsules, organic, Fair Trade (FT) or with cause-related marketing (CrM) activities.
- Some niches are growing fast while the overall coffee market is slightly growing at 1.7% in Germany.
- Between 2000 and 2008: double digit growth rates on market for single and double certified coffee, e.g. Fair Trade and organic.
- FLO certified Fair Trade labeled coffee shows a growth rate of 46% worldwide between 2004 and 2006 and 14% in 2008 in Germany (Byers et al. 2008; Transfair 2008).
- Organic coffee in Germany: 3.5% market share and double digit growth until 2009 (BLE 2008).
- There are differences in consumers' economic evaluation indicating different preferences for these special types of coffee certification (Langen et al. 2009).

Number of CrM campaigns in Germany



Research objective & Study design

Analyze consumers' willingness to pay (WTP) for coffee labels and coffee innovations

- Test WTP for single certified coffee (organic. FT, CrM) and double certified coffee (organic-FT).
- Test market potential of possible future innovations of FT coupled with CrM, CrM coupled with organic and a mix of an organic FT coffee that is linked to a cause (FT-CrM-organic).

- Consumer survey applying non-hypothetical Vickrey auctions and paper and pencil interviews.
- Participants had to bid on 8 coffees. Winners of the auctions had to purchase the coffee. If a participants won more than one auction, (s)he had to buy one randomly chosen.
- Collecting data on purchase behavior, attitudes towards FT, organic, CrM and socio-demographics.
- Year: 2009. Sample size: n = 217 adult coffee consumers (stratified sample). Place: Bonn, Germany.
- Data are analyzed using single tobit models (Greene 2003, 764pp.) with the lower bound set to zero to account for zero bids.

T 1: Description of variables

	Variable	Description	Mean	Std. Dev.
Dependent variables	Conventional	Bids in Euro on conventional coffee	2.90	1.74
	FT	Bids in Euro on Fair Trade (FT) coffee	2.85	1.85
	Organic	Bids in Euro on Organic coffee	2.92	1.75
	FT & Organic	Bids in Euro on FT organic coffee	3.02	1.78
	CrM	Bids in Euro on CrM coffee labeled with NGO 'Menschen für Menschen' (MfM)	3.03	1.64
	CrM & Organic	Bids in Euro on CrM-MfM organic coffee	3.04	1.77
	CrM & FT	Bids in Euro on CrM-MfM FT coffee	2.63	1.65
	FT & Organic & CrM	Bids in Euro on CrM-MfM organic FT coffee	2.85	1.66
Independent variables	Coffee from discounter	Coffee shopping at discount shops (5=very often to 1=never)	3.12	1.50
	Coffee from organic shop	Coffee shopping at organic shop (5=very often to 1=never)	1.53	0.92
	Info FT	Informed about FT, Charity NGO 'MfM', organic (5=a lot of	2.46	1.23
	Info NGO	knowledge to 1=no knowledge)	2.49	1.12
	Info Organic		3.04	0.98
	Like CrM	"I like CrM" (1=completely agree to 7=completely disagree)	2.73	1.78
	Purchase CrM	Did purchase CRM previously (1=yes, 0=no)	0.20	0.41
	FT tastes better	Opinion that FT coffee tastes better (3=better, 2=equally good, 1=worse than other coffee)	1.92	0.38
	Organic production	Importance of organic. sustainable production (7= very important to 1=very unimportant [a])	4.15	1.87
	No child labor	Important that produced w/o child labor [a]	6.22	1.61
	Fair prices	Importance of reasonable producer prices [a]	5.30	1.69
	Cheap coffee	Important that coffee is cheap [a]	5.53	1.15
	On sale coffee	Important that coffee is on sale [a]	4.28	2.12
	Branded coffee	Important that coffee has a well-known brand [a]	4.73	2.20
	Daily coffee cons	Number of cups of coffee per day	3.52	1.73
	NGO Member	Member of some NGO (1=yes, 0=no)	0.14	0.35
	Female	Gender female (1=female, 0=male)	0.60	0.40
	Rural area	Living area (rural) (1=rural, 0=city/town)	0.14	0.35
	Age	Age (in years)	43.44	14.93
	Income	Household Net-Income (EUR/month)	1787.22	1302.09
	Education	Education (in years with 9 lowest and 21 highest)	12.42	3.18

Examples of coffees used in auctions

Empirical results & Conclusions

In the following the results of the tobit models are presented. Each model shows determinants of the WTP for coffees differentiated by means of labels (see table T2).

T 2: Determinants of WTP for differentiated coffees

	Conventional		Fair Trade		Organic		Fair Trade & Organic		CrM		CrM & Organic		CrM & Fair Trade		Fair Trade & CrM & Organic	
	Coef.	Std. Err.[a]	Coef.	Std. Err.[a]	Coef.	Std. Err.[a]	Coef.	Std. Err.[a]	Coef.	Std. Err.[a]	Coef.	Std. Err.[a]	Coef.	Std. Err.[a]	Coef.	Std. Err.[a]
Coffee from discounter	n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		-0.27	0.16 *	n.s.	
Coffee from organic shop	n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		n.s.	
Info Fair Trade	n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		-0.35	0.17 **
Info NGO	n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		n.s.	
Info Organic	n.s.		0.63	0.30 **	n.s.		n.s.		n.s.		n.s.		n.s.		n.s.	
Like CrM	-0.33	0.12 ***	-0.34	0.12 ***	-0.27	0.12 **	n.s.		-0.31	0.11 ***	-0.38	0.12 ***	-0.41	0.11 ***	-0.27	0.10 **
Purchase CrM	-1.49	0.52 ***	-1.47	0.50 ***	-1.27	0.51 **	-1.40	0.51 ***	-1.03	0.46 **	-1.02	0.51 *	-1.49	0.47 ***	-0.86	0.44 *
FT tastes better	n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		n.s.	
Organic production	n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		n.s.	
No child labor	n.s.		0.28	0.16 *	n.s.		n.s.		n.s.		n.s.		0.26	0.15 *	n.s.	
Fair prices	n.s.		-0.36	0.18 **	n.s.		n.s.		-0.31	0.16 *	n.s.		n.s.		n.s.	
Cheap coffee	n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		n.s.	
On sale coffee	0.24	0.13 *	n.s.		0.22	0.13 *	n.s.		n.s.		n.s.		0.23	0.11 **	0.22	0.10 **
Branded coffee	n.s.		n.s.		-0.17	0.10 *	n.s.		n.s.		n.s.		n.s.		n.s.	
Daily coffee consumption	n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		0.26	0.13 **	n.s.	
NGO Member	-1.71	0.68 **	n.s.		n.s.		-1.25	0.65 *	n.s.		-1.28	0.65 *	n.s.		n.s.	
Female	-0.83	0.45 *	-1.10	0.43 **	-0.89	0.45 *	n.s.		n.s.		-0.96	0.45 **	-0.78	0.41 *	-0.87	0.37 **
Rural area	1.00	0.59 *	1.66	0.57 ***	1.55	0.60 **	1.40	0.60 **	n.s.		1.22	0.59 **	n.s.		n.s.	
Age	n.s.		-0.04	0.02 **	n.s.		n.s.		n.s.		n.s.		-0.03	0.01 *	n.s.	
Income	n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		n.s.	
Education	n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		n.s.		n.s.	
Constant	n.s.		5.62	2.33 **	n.s.		n.s.		6.11	2.18 ***	9.66	2.39 ***	4.95	2.22 **	n.s.	
LR chi2(21) (Prob>chi2)	31.06 (0.0726)		39.67 (0.0082)		30.64 (0.0798)		28.71 (0.121)		27.39 (0.1582)		28.38 (0.1297)		38.37 (0.0117)		32.61 (0.0508)	
PseudoR2	0.1093		0.143		0.1081		0.103		0.1002		0.1005		0.1416		0.1247	

a *** p<0.01; ** p<0.05;* p<0.1; n.s. = not significant

- If production w/o child labor is important WTP for FT & CrM-FT increases
- If coffee being ‚on sale' is important WTP for conventional, organic, CrM-FT and CrM-FT-organic coffees increases
- Consumers drinking more coffee on a daily basis have a higher WTP for CrM-FT coffee
- Consumers living in a rural area have a higher WTP in general
- Shoppers at discounters have a lower WTP for CrM-FT coffee
- Consumers who like and purchase CrM have a lower WTP for all coffees except FT and organic
- Customers more informed about FT in particular, have a lower WTP for triple certified coffee
- Those who think a brand on the coffee is not important are shoppers of organic coffee with a higher WTP
- Females are more sensitive to prices in general
- Older shoppers have a lower WTP for FT and CrM-FT

Overall, results are inconsistent and the differences in WTP for the labels and coffee differentiation cannot be interpreted precisely. Possible explanations may be that

1. The model is misspecified.
2. The design of the study – bidding on 8 different coffees – was too complex for participants.
3. The results indeed display the behavior of the hybride consumer who is changing purchase patterns dependent on the situation and is not consistent in his/her attitudes.

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Is there potential for coffee differentiation by means of labeling combinations in Germany?